IN THE CLAIMS

Please cancel claim 1-18 without disclaimer or prejudices as to the subject matter of claims 1-18.

Please add claims 19-36 as follows:

19. (NEW) A method of controlling power to a high-intensity-discharge lamp, said method comprising:

determining a voltage across the lamp and a current through the lamp;

approximating a power to the lamp based on a sum of the lamp voltage and the lamp current; and

regulating power to the lamp based on a comparison of the approximated lamp power and a predetermined value.

20. (NEW) The method of claim 19, wherein a determination of the lamp voltage and the lamp current includes:

scaling the lamp voltage; and

converting the lamp current into a representative voltage.

21. (NEW) The method of claim 20, wherein an approximation of the lamp voltage includes:

summing the scaled lamp voltage and the representative voltage.

22. (NEW) The method of claim 19, wherein a comparison of the approximated lamp power and the predetermined value includes:

determining whether the approximated lamp power is greater or less than the predetermined value.

23. (NEW) A system of controlling power to a high-intensity-discharge lamp, said system comprising:

a voltage sensor for determining a voltage across the lamp;

a current sensor for determining a current through the lamp; and

a control circuit operatively connected to said current sensor and said voltage sensor, said control circuit for approximating a lamp power based on a sum of the lamp voltage and the lamp current, comparing the approximated lamp power against a desired level, and regulating the power to the lamp based on the comparison.

24. (NEW) The system of claim 23, wherein said current sensor includes a resistor connected in series with the lamp.

25. (NEW) The system of claim 23, further comprising:

a signal conditioning circuit for scaling and filtering an output of said current sensor.

26. (NEW) The system of claim 23, wherein said voltage sensor includes a voltage divider network shunting the lamp.

27. (NEW) The system of claim 26, wherein said voltage divider includes a voltage-limiting network to reduce a starting voltage effect on the power approximation.

28. (NEW) The system of claim 23, wherein said control circuit includes:

a summing circuit for approximating the power supplied to the lamp by adding the output from said voltage sensor and a representative voltage determined from an output of said current sensor.

29. (NEW) The system of claim 28, wherein said summation circuit includes a filter to average the summed voltages over time.

30. (NEW) The system of claim 28, wherein said summation circuit includes a plurality of rectifiers connected to allow the absolute value of the representative voltage to be added to the absolute value of the voltage sensor output.

31. (NEW) The system of claim 23, wherein said control circuit includes a voltage reference signal generator for comparing against the lamp power.

32. (NEW) The system of claim 31, wherein said reference signal generator produces a saw tooth waveform synchronized with the sensed current and twice the frequency of the sensed current.

33. (NEW) The system of claim 23, wherein said control circuit includes a current limiting component shunted by an electronic switch in series with the lamp.

34. (NEW) The system of claim 23, wherein said control circuit includes a comparator circuit for comparing voltage representing the lamp power to a reference.

35. (NEW) The system of claim 34, wherein said comparator circuit controls an electronic switch through an electrically isolated coupler.

36. (NEW) A system for controlling power to a high-intensity-discharge lamp said system comprising:

means for determining a voltage across the lamp and a current through the lamp;

means for approximating a power to the lamp based on a sum of the lamp voltage and the lamp current; and

means for regulating the power to the lamp based on a comparison of the approximated lamp power to a predetermined value.